
Simaba docensis, a New Brazilian Species of Simaroubaceae

Edivani Villaron Franceschinelli

Departamento de Botânica, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais, 31.270-010, Belo Horizonte, MG, Brazil

Kikyo Yamamoto

Departamento de Botânica, Instituto de Biologia, Universidade Estadual de Campinas, 13.083-970, Campinas, SP, Brazil

ABSTRACT. *Simaba docensis*, a new species of Simaroubaceae, is described and illustrated. Its geographical distribution seems to be restricted to semideciduous forest in the region of the Rio Doce basin, Minas Gerais, southeastern Brazil. Accordingly, it is likely to be a rare endemic and endangered species. It is very closely related to the only other Amazonian species of section *Floribundae* Engler, *S. paraensis* Ducke, from which it is basically distinguished by the number and shape of leaflets, leaf indument, and flower and fruit size.

We describe here a new species of *Simaba* Aublet (Simaroubaceae), *S. docensis*. Its geographical distribution is apparently restricted to southeastern Minas Gerais, Brazil, in the semideciduous forest of the Rio Doce basin. The closest species to *S. docensis* is *S. paraensis* Ducke.

The South American genus *Simaba* has 25 species, divided into three sections: *Tenuiflorae*, *Floribundae*, and *Grandiflorae* (Engler, 1874; Cronquist, 1944). They are trees or shrubs with pinnately compound leaves. The main diagnostic characters used to distinguish the three sections of *Simaba* are listed in Table 1. Section *Tenuiflorae* is an Amazonian taxon, whereas the other two sections are mostly extra-Amazonian. *Simaba paraensis* is noteworthy because it is the only Amazonian species of section *Floribundae*. Furthermore, it can have small flowers, as found in section *Tenuiflorae*, and it has stamen appendages as occur in section *Grandiflorae*. However, *S. paraensis* has large paniculate inflorescences and other flower characters similar to those found in *Floribundae*, which places it in this section. The new species resembles *S. paraensis* in its general appearance and because it has androecium characteristics of the section *Grandiflorae*. However, *S. docensis* fits better the characteristics of section *Floribundae* than *S. paraensis* because of its larger flowers.

Couepia monteclarensis Prance, another endemic

species of the Rio Doce basin, is also taxonomically very close to two Amazonian congeneric species: *C. sandwithii* Prance and *C. bernardii* Prance (Prance, 1989). Other field collectors (J. A. Lombardi & K. Yamamoto, pers. comm. 1999) have noticed the occurrence of Amazonian species affinities in the semideciduous forest of the Rio Doce basin. The conservation and detailed studies of this forest can help us to understand the evolution and history of the South American forests.

Simaba docensis Franceschinelli & K. Yamamoto, sp. nov. TYPE: Brazil. Minas Gerais: Marliéria, Parque Estadual do Rio Doce, on peninsula at Lake Helvécio, 24 Nov. 1975 (fl), *Heringer & Eiten 15182* (holotype, MO; isotype, US). Figure 1.

Ad sectionem *Floribundae* Engler referenda, *S. paraensis* Ducke androecio similis, sed foliis 7–10 jugatis, foliolis subtus puberulis vel pilosis, floribus majoribus 8–10 mm longis differt.

Tree 10–30 m tall. Branches glabrous with gray bark, strongly grooved and furrowed longitudinally, with prominent transversal scars due to leaf and bud abscissions. Leaves with 6–21 leaflets, usually 7–10 jugate, at apex of the branches; rachis 7.5–20 cm long, cylindrical, puberulous. Leaflets sessile or subsessile, opposite or subopposite, interjuga 2–1.5 cm long. Leaflet 2.5–5 × 1.1–1.7 cm, blade oblong to obovate or elliptic, chartaceous, apex usually acute, sometimes obtuse to rounded, with gland at the tip, lateral leaflet base usually oblique and terminally cuneate, puberulent beneath with prominent central vein, glabrescent and slightly wrinkled above with prominent and puberulent central vein; lateral veins not visible. Inflorescence paniculate, 8–22 cm long, with ferruginous tomentose axes, secondary axes 1.5–11 cm long, usually forming a right angle with the primary axis, subtended by bracts narrowly oblong to obovate with gland on the tip, 2.0–5.0 cm long, flowers at

Table 1. Main diagnostic characters used to distinguish the three sections of *Simaba*.

Characters	Sect. <i>Tenuiflorae</i>	Sect. <i>Floribundae</i>	Sect. <i>Grandiflorae</i>
Inflorescence type	raceme or small paniculate	large paniculate	large few-branched paniculate or pseudoraceme
Flower length	3.5–7 mm	(5.5–)7–15 mm	15–35 mm
Calyx	united at the base to the middle length	united to the middle length, rarely at the base and cupuliform (<i>S. insignis</i>)	cupuliform
Stamen appendage in indument	glabrescent to hairy, free from each other or slightly united, but not in a stamen tube	hairy, free or united, but not in a stamen tube (except <i>S. paraensis</i> and <i>S. docensis</i>)	hairy on their edges, hairs intertwined forming a stamen tube
Stamen appendage length	from 1/3 to 1/2 of the filament length, covering the basal part of the ovary to the whole ovary	from 1/2 to 3/4 of the filament length, covering the ovary and part of the style	almost the same length as the filament, covering the ovary and almost the whole style
Geographical distribution	Amazonian region	mostly extra-Amazonian	mostly extra-Amazonian

the apex of the axes. Flowers 8–10 mm long, subtended by 3 pilose, greenish bracteoles with gland near tip. Sepals light green, triangular, united only basally, apex acute, 2–3 × 1.2–1.7 mm. Petals light green or slightly ferruginous externally, tomentose above and beneath, 8–10 × 2–3 mm, oblong with apex rounded to acute. Stamens 5.5–6 mm long, filaments 5–5.5 mm long; appendage 4.2–4.7 mm long, adaxially pilose, completely united to filament, with two apical teeth; anthers 0.5–0.8 × 0.2 mm, oblong, white. Gynophores 1.5–2 mm high, pilose; ovaries 5-carpellate, 1.5–1.7 mm high, pilose, orange; styles 3–3.3 mm long; stigmas minute, 4–5-lobed. Drupes 2–2.2 × 1.5–1.6 cm, ellipsoid, densely ferruginous pilose-villous.

The specific epithet “*docensis*” refers to the col-

lection site of the type specimen, the Parque Estadual do Rio Doce. The only two collections known for this species were made in this region. We have tried to re-collect this species, but we could only find one tree at the same locality where the type specimen was collected. This suggests that *S. docensis* may be a rare species restricted to the Rio Doce Basin forest. Its geographical distribution is the simplest character that separates *S. docensis* from *S. paraensis*. All characters used to distinguish *S. docensis* from *S. paraensis* are presented in Table 2. Besides geographical distribution, leaflet apex shape, and secondary vein visibility, sepal and gynophore size and fruit color and size are the most helpful characters that separate these two species.

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Table 2. Main diagnostic characters used to distinguish *Simaba docensis* from *S. paraensis*.

Characters	<i>S. docensis</i>	<i>S. paraensis</i>
Geographical distribution	Minas Gerais (Zona da Mata), Brazil	Amazonian Region of Brazil, Bolivia, and Venezuela
Leaflet number per leaf	6–21	6–13
Leaflet size	2.5–5.0 × 1.1–1.7 cm	3.5–9 × 1.3–3.3 cm
Leaflet indument	puberulent beneath, glabrescent above	glabrous on both sides, sometimes with puberulent veins
Leaflet apex shape	usually acute, obtuse to rounded	retuse or obtuse to emarginate
Leaflet vein evidence	secondary veins not visible	secondary veins visible
Sepal size	2.0–3.0 × 1.2–1.7 mm	0.8–1.5 × 1.0–1.5 mm
Petal size	8.0–10.0 × 2.0–3.0 mm	5.5–9.0 × 1.5–3.0 mm
Gynophore size	1.5–2.0 mm high	0.7–1.7 mm high
Drupe size	2.0–2.2 × 1.5–1.6 mm	1.5–1.8 × 1.1–1.3 cm
Drupe indument and color	densely ferruginous, pilose-villous	puberulent and yellow

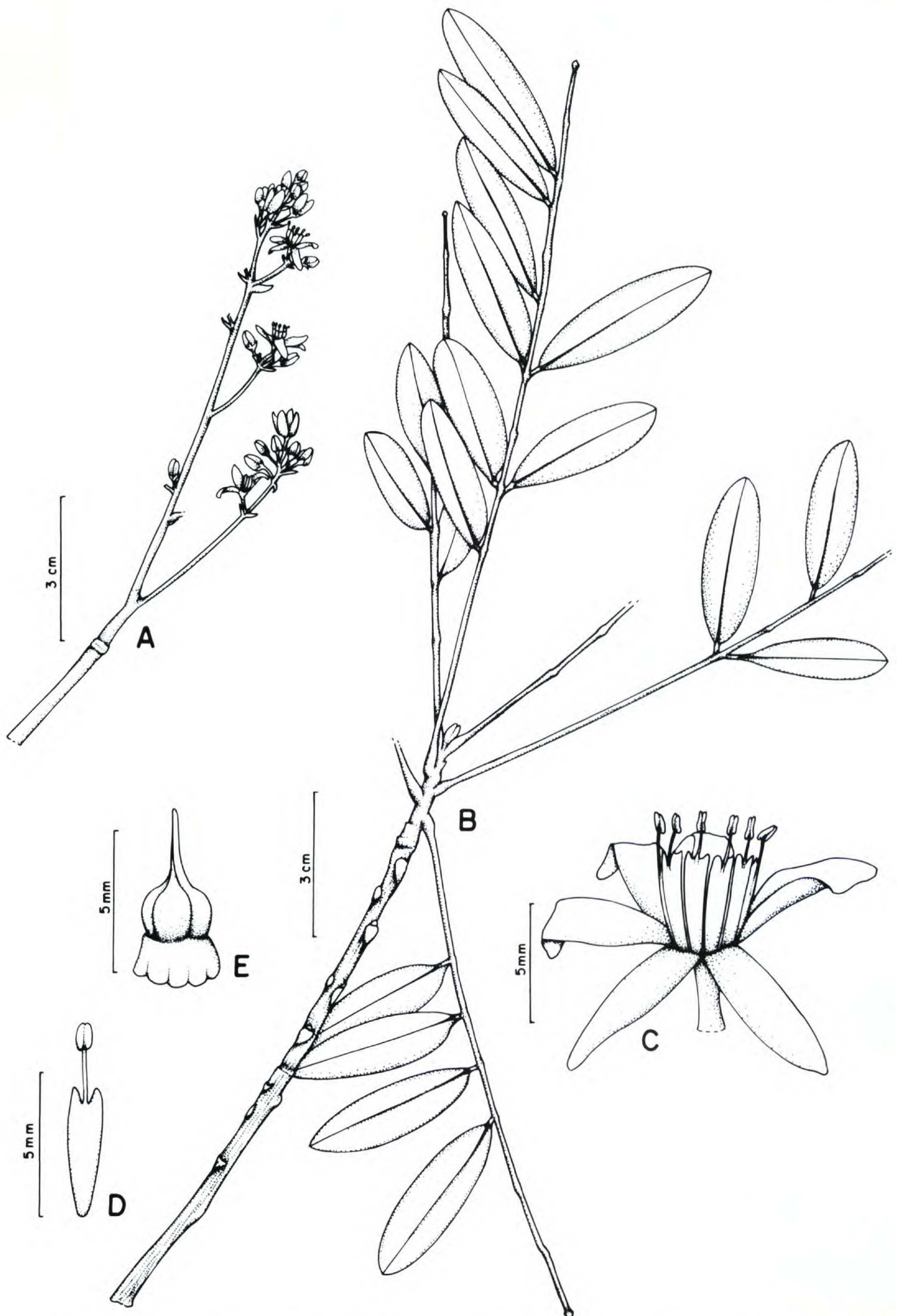


Figure 1. *Simaba docensis* Franceschinelli & K. Yamamoto. —A. Inflorescence. —B. Vegetative branch. —C. Flower. —D. Stamen. —E. Ovary and gynophore. A–E from E. P. Heringer & Eiten 15182 (MO). Drawn by Edivani V. Franceschinelli.

Marliéria, Parque Estadual do Rio Doce, *Heringer & Eiten 15194* (NY, US).

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